Submission re the End of Waste (EOW) Framework review

The Queensland Water Directorate (***qldwater***) is the central advisory and advocacy body within Queensland's urban water and sewerage services sector, providing a collaborative hub for its members to provide safe, secure and sustainable urban water services to Queensland communities. Our members include all local government and local government-owned water service providers in the state, along with other core and affiliate members from within the sector.

Specific consultation with our members on issues relating to sewerage and environmental protection is undertaken through the Sewerage and Water Environmental Advisory Panel (SWEAP), an active group composed of environment professionals and water managers from within our member base.
The members of SWEAP and ***qldwater*** are grateful for the opportunity to participate in the review and thank the representatives from SLR Consulting that took part in a session on 23 November 2022.

Issues have been raised specific to where the EOW codes interact with the urban water sector. There are two specific codes that mostly concern the urban water sector:

- Biosolids ENEW07359617
- Water treatment residuals ENEW07503318

The EOW code for biosolids is widely used within the urban water sector. Within Queensland it is expected that all but the smallest water and sewerage service providers (WSPs) interact with the EOW code in some way. In many cases this interaction is delegated to a third-party contractor, which transports, samples and distributes biosolids in accordance with the code. We call your attention to the following:

Biosolids: Contaminant source control

The urban water sector is an important gateway between the community and the environment. Wastewater treatment plants (WWTPs) accept, manage and treat water on behalf of the community from domestic, industrial, trade waste and landfill sources on its journey to the broader environment, which includes biosolids as administered by the EOW Code. There is growing evidence that the domestic sources are a significant contributor to the load of PFAS in urban wastewater in Australia, which cannot be controlled by mechanisms such as trade waste approvals applied to industrial and commercial sources. This suggests that a much broader effort is required to manage these chemicals at the source, incorporating manufactured goods and products, especially those items which are imported. The urban water sector supports measures that reduce the volume and number of persistent bioaccumulative and toxic (PBT) chemicals and especially PFAS chemicals discharged to wastewater through regulation under the national IChEMS framework, which is currently under development.

The sector is concerned that IChEMS is developing too slowly in Australia compared with other international jurisdictions, and believes that the Queensland government should call for the following:

1. The fast-tracking of national labelling laws for all imported goods that identifies chemicals that belong to the PFAS class of chemicals.

2. A transition to the national prohibition of the PFAS class of chemicals in all goods in Australia that are intended for use in contact with skin and food or food products.

3. Recognition and support of the urban water sector as the receiver of these chemicals on behalf of the community.

These measures will assist the urban water sector and the communities they serve to make informed choices that will support the sustainable development of a circular economy for the urban water sector in Queensland.

Biosolids: Compliance cost

The EOW code for biosolids has a substantial compliance cost associated with the requirement for testing of multiple analytes for "at least every 120 tonnes" of the resource to be used. This includes both standard and Total Oxidisable Precursor Assays PFAS analysis coupled with sampling and analysis of PFAS concentrations in the soil before and after application of the biosolids resource. This is a large cost to be borne by the WSP in facilitating the beneficial reuse of biosolids. The resourcing of such compliance with the code may be preventing smaller WSPs from beneficially reusing biosolids under the code altogether.

Biosolids: Clarification on application

The code would benefit from clarification in some aspects, where it seems to have been written for larger WSPs to the detriment of its application to smaller wastewater treatment plants (WWTPs). For example, pathogen reduction processes "from unknown processes" instead of thermally treating or high pH high temperature processes, are the norm for smaller and regional WWTPs. To be classified for unrestricted use as a Grade A resource, the biosolids must meet contaminant and microbiological limits. We are aware of specific examples where meeting these conditions as laid out in the EOW code is deemed to be insufficient to permit the classification of the resource for unrestricted use.

There are also examples of inconsistent application of the code where improved transparency and definitions would be beneficial. For example:

- There is no definition of airdrying in the EOW Code. The Australian Water Association defines "biosolids cake as stabilised and dried to 15-20% solids and dewatered biosolids are defined as 15-35%".
- The "nominal" definition of "extended aeration" in the notes to Table 4 indicates that barrier option should be used if the sludge retention time (SRT) is less than 20 days. If a WWTP has a SRT of 13 days it is unclear whether the biosolids meet the pathogen and vector reduction criteria.
- In the notes to Table 4 "undue risk solids" are defined as those that may represent a higher pathogen risk or excessive level of unstabilised solids and examples are given e.g.

anaerobic digestion hydraulic retention time (HRT) of less than 7 days, or activated sludge treatment with SRT of less than 12 days. It is unclear whether a high pathogen risk means values that are in excess of those given in *Table 2 – biosolids classification requirements*, or are the requirements to meet the examples given e.g. SRT of over 12 days.

Biosolids: Reference to the NSW Biosolids Guidelines

The EOW code makes frequent reference to the NSW Biosolids Guidelines. However, it is not explicitly stated which section of the NSW Biosolids Guidelines are referred to, which has the potential to cause confusion. For example, there are differences in specified minimum testing volumes between the EOW code and the NSW Biosolids Guidelines.

There are some sections of the EOW code that are subtly different from the NSW Biosolids Guidelines. As an example, the note on Table 3 states "*Contaminant limits are NOT mean values. Refer to Schedule 2 of the NSW Biosolids Guidelines*." However, that schedule describes a procedure for contaminant grading using statistical methods for batch and continuous sampling.

In another example, in Table 4 – Biosolids stabilisation requirements of the EOW code, the vector attraction reduction requirements for *Process Option (for Stabilisation B only)* states:

1. *At least 20 days continuous or intermittent extended aeration including aerobic digestion time, or*
2. *At least six (6) months lagoon-based treatment (i.e., storage) at ambient temperatures.*

The requirements for the same *Process Option (for Stabilisation B only)* in the NSW Biosolids Guidelines states:

1. *At least 20 days continuous or intermittent extended aeration including aerobic digestion time followed by six (6) months storage of biosolids in a lagoon or equivalent process.*

We understand the difference in requirements is deliberate, however the similarity has the potential to cause confusion. We are also aware that the NSW Biosolids Guidelines are currently under review and are likely to be revised. The interaction between the EOW Code and the NSW Biosolids Guidelines warrants further examination.

Water treatment residuals: Applicability

The EOW code for water treatment residuals (WTR) was developed as a fit for purpose code for a single large WSP which had the resources to undertake product development to turn WTR (alum sludge) into a product for beneficial reuse. Permitted uses of WTR as a resource under the EOW code are for land application as a soil ameliorant or conditioner, or for manufacturing compost. There are no other instances in Queensland of which we are aware where this EOW code has been employed, and the existence of the EOW code gives a false sense that all WTR may be beneficially reused. Most WSPs that produce WTR discharge it directly to sewer. However, there is at least one

instance of which we are aware where the geographical location of the water treatment facility (the source of the WTR) distant from a sewer, coupled with the extreme hydrophobic characteristics of its WTR, meaning that disposal at offsite landfill is currently the only feasible option for this WSP.

This WSP is also concerned that a General Exemption for WTR waste levy under the *Waste Reduction and Recycling Regulation 2011* (QLD), set to expire from 1 July 2024, will place a disproportionately large burden on the WSP around its inability to develop a beneficial reuse for a waste product generated through operation for the public good.

General: Interaction between ERAs and the EOW Code

The *Environmental Protection Regulation 2008* was amended in 2018, to update the classification of regulated waste and revise the waste-related Environmental Relevant Activities (ERAs). The classification commenced February 2019. With these changes the acceptance of regulated waste (sewage sludge) at sewage treatment plant sites from other sites now requires a waste related ERA attached to the site. Previously it had been considered as a concurrent activity with the activities already occurring on site regulated under the ERA63. There is a lack of clarity in the application of the regulation, raising the possibility that some WSPs may not be aware of their obligation to have a waste-related ERA attached to their site if they are accepting sewage sludge from other locations. This material from other sites could potentially be considered as a waste if it has not been approved to meet the EOW code as a resource.